AmeriHealth Caritas Louisiana

National Imaging Associates, Inc.*	
Clinical guidelines NECK CT (soft tissue)	Original Date: September 1997
CPT Codes: 70490, 70491, 70492	Last Revised Date: May 2020
Guideline Number: NIA_CG_008-1	Implementation Date: ~~January 2021~~TBD

GENERAL INFORMATION:

It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. All prior relevant imaging results, and the reason that alternative imaging (gold standard, protocol, contrast, etc.) cannot be performed must be included in the documentation submitted.

INDICATIONS FOR NECK CT:
(ACR, 2018b, 2018c)

Suspected tumor or cancer

- **S~~P~~alpable ~~s~~uspicious lesions in mouth or throat (Kuno, 2014)**
- **Suspicious mass/tumor found on another imaging study and needing clarification ~~or found by physical exam~~ (ACR, 2018~~a~~b)**
- **Neck Mass (non-~~t~~parotid region or thyroid):**
  - **Present on physical exam and remains non-diagnostic after ~~x-ray or~~ ultrasound is completed (Kuno, 2014)**

  Note: ~~*~~For discrete cystic lesions of the neck, an ultrasound should be performed as initial imaging unless there is a high suspicion of malignancy
  - **Increased risk for malignancy (Kirsch, 2019) with one or more of the following findings (Pynnonen, 2017):**
    - **Fixation to adjacent tissues**
    - **Firm consistency**
    - **Size >1.5 cm**
    - **Ulceration of overlying skin**
    - **Mass present ≥ two weeks (or uncertain duration) without significant fluctuation and not considered of infectious cause**
    - **History of cancer**
  - **Failed 2 weeks of treatment for suspected infectious adenopathy (Haynes, 2015).**

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- **Neck Mass (parotid) (ACR ~~Neck Mass~~, 2018b)**
  - **Parotid mass found on other imaging study and needing further evaluation**

  Note: *US is the initial imaging study of a parotid region mass to determine if the location is inside or outside the gland (ACR, 2018~~a~~b; Burke, 2011; Cicero, 2018
- **Neck M~~N~~ass (thyroid) - US is the initial imaging study of a ~~parotid~~thyroid region mass. CT is preferred over MRI in the evaluation of thyroid masses since there is less respiratory motion artifact (ACR~~T Thyroid~~, 2018c)**
  - **Staging and monitoring for recurrence of known thyroid cancer (ACR ~~Thyroid~~, 2018c).**
  - **To assess extent of thyroid tissue when other imaging suggests extension through the thoracic inlet into the mediastinum or concern for airway compression* (Gharib, 2016; Lin, 2016~~; Gharib 2016~~)**

  ***Note~~OTE~~: Chest CT may be included for preoperative assessment in some cases**

Pediatric patients (≤18 years old) (Wai, 2020):

- ~~**In pediatric patients (≤18) an ultrasound should be completed as initial imaging.~~
- Neck masses ~~are a common presenting complaint~~ in the pediatric population ~~with malignant causes less likely than in adults (Brown, 2016)~~**if ultrasound is inconclusive or suspicious (Brown, 2016)**
-
- **History of malignancy**

Known tumor or cancer of skull base, tongue, larynx, nasopharynx, pharynx, or salivary glands

- Initial staging (Kuno, 2014)
- Restaging during treatment
- **Areas difficult to visualize on follow-up examination**
- Suspected recurrence or metastases based on symptoms or examination findings
  - New mass
  - Change in lymph nodes (Vogel, 2016)

- ~~Active monitoring for recurrence~~
- ~~Diagnosed Primary Hyperparathyroidism when surgery planned~~
  - ~~Previous nondiagnostic ultrasound or nuclear medicine scan (Keogh, 2008; Tian, 2018)~~

Indication for combination studies for the initial pre-therapy staging of cancer, OR active monitoring for recurrence as clinically indicated OR evaluation of suspected metastases:

- ≤ 5 concurrent studies to include CT or MRI of any of the following areas as appropriate depending on the cancer: Neck, Abdomen, Pelvis, Chest, Brain, Cervical Spine, Thoracic Spine or Lumbar Spine

Known or suspected deep space infections or abscesses of the pharynx or neck (Meyer, 2009)
~~**Suspected tumor or cancer (not parotid region or thyroid):**~~

- ~~Suspicious mass/tumor found on an imaging study and needing clarification *or* found by physical exam (ACR, 2018a)~~
- ~~Palpable suspicious lesions in mouth or throat (Kuno, 2014)~~
- ~~Ultrasound (US) should be completed as the initial imaging for a parotid region mass to determine if the location is inside or outside the gland (ACR, 2018a; Burke, 2011; Cicero, 2018)~~
- ~~For discrete cystic lesions of the neck, an ultrasound should be performed as initial imaging.~~
- ~~For all other non-thyroid neck masses with high suspicion for malignancy, start with neck CT~~
- ~~Increased risk for malignancy (ACR, 2018aKirsch, 2019) with one or more of the following findings (Pynnonen, 2017):~~
    - ~~Fixation to adjacent tissues~~
    - ~~Firm consistency~~
    - ~~Size >1.5 cm~~
    - ~~Ulceration of overlying skin~~
    - ~~Mass present ≥ two weeks (or uncertain duration) without significant fluctuation and not considered of infectious cause~~

~~**Known or suspected deep space infections or abscesses of the pharynx or neck** (Meyer, 2009)~~

~~**In pediatric patients (≤18) an ultrasound should be completed as initial imaging.**~~
~~Neck masses are a common presenting complaint in the pediatric population with malignant causes less likely than in adults (Brown, 2016)~~

Pre-operative evaluation.

Post-operative/procedural evaluation (e.g. post neck dissection):

- A follow-up study may be needed to help evaluate a patient's progress after treatment, procedure, intervention, or surgery. Documentation requires a medical reason that clearly indicates why additional imaging is needed for the type and area(s) requested.

Other indications for a Neck CT:

- ~~Vocal cord lesions or vocal cord paralysis (Dankbaar, 2014)~~
- Salivary gland stones ~~or suspected gland abscess or mass~~ (Cicero, 2018)
- ~~-~~Vocal cord lesions or vocal cord paralysis (Dankbaar, 2014)
- ~~-~~

- ~~For evaluation of tracheal stenosis (Chung, 2011; Heidinger, 2015)~~Diagnosed ~~P~~**p**rimary h~~H~~yperparathyroidism when surgery **is** planned
    - Previous nondiagnostic ultrasound or nuclear medicine scan (~~Keogh, 2008;~~ Tian, 2018)

- ~~Brachial plexus dysfunction (Brachial plexopathy/Thoracic Outlet Syndrome) (Ferrante, 2012; Tharin, 2014)) when MRI is contraindicated or cannot be performed~~
- To assess for foreign body when radiograph is inconclusive or negative (Guelfguat, 2014)
- ~~To assess extent of thyroid tissue when other imaging suggests extension through the thoracic inlet into the mediastinum or concern for airway compression* (Lin, 2016; Gharib 2016)~~
- For evaluation of tracheal stenosis (Chung, 2011; Heidinger, 2015)
- Dysphagia after appropriate work up including fluoroscopy, modified barium swallow, or biphasic esophagram (ACR, 2018~~a~~**a**~~b~~)
-
- **Bell's palsy/hemifacial spasm, if MRI is contraindicated or cannot be performed (for evaluation of the extracranial nerve course)**
    - **If atypical signs, slow resolution beyond three weeks, no improvement at four months, or facial twitching/spasms prior to onset (Quesnel, 2010)**

- ~~***NOTE:** Chest CT may be included for preoperative assessment in some cases~~**Objective cranial nerve palsy (CN IX-XII) if MRI is contraindicated or cannot be performed (for evaluation of the extracranial nerve course) (Mumtaz, 2014; Policeni, 2017)**

BACKGROUND:

High resolution CT can visualize both normal and pathologic anatomy of the neck. It is used in the evaluation of neck soft tissue masses, abscesses, and lymphadenopathy. For neck tumors, it defines the extent of the primary tumor and identifies lymph node spread. CT provides details about the larynx and cervical trachea and its pathology. Additional information regarding airway pathology is provided by three-dimensional images created from the CT dataset. Neck CT can also accurately depict and characterize tracheal stenoses.

With the rise of human papillomavirus-related oral, pharyngeal, and laryngeal cancers in adults, contrast enhanced neck CT has become more important for the evaluation of a neck mass, deemed at risk for malignancy, surpassing ultrasound for the initial evaluation in many cases. The American Academy of Otolaryngology-Head and Neck Surgery recently issued strong recommendations for neck CT or MRI, emphasizing the importance of a timely diagnosis (Pynnonen, 2017).

POLICY HISTORY:

Review Date: April 2019
Review Summary:

- Suspected Tumor or Cancer:
    - Added specification: "Suspected tumor or cancer *(not parotid region or thyroid)"* and removed non-diagnostic specification: 'Suspicious mass/tumor found on imaging study and needing clarification or found by physical exam *and remains non-diagnostic after x-ray or ultrasound is completed'*.
    - Added: "*Ultrasound should be completed as the initial imaging*"
    - Indication: Increased risk of malignancy, removed: '*No known infection and unknown duration with no fluctuation on exam'*; Added: "*Mass present ≥ two weeks without significant fluctuation and not considered of infectious origin*"
- For pediatric patients, added indication specifying an Ultrasound should be completed as initial imaging
- Added indications: Foreign body, brachial plexus, dysphagia, extent of thyroid tissue affected after other imaging completed or concern for airway compression
- Added Background information emphasizing the importance of timely diagnosis of neck mass with Neck CT, due to prevalence of HPV and associated oral, pharyngeal, and laryngeal cancers

Review Date: May 2020
Review Summary:
Clarified:

- **Note: For discrete cystic lesions of the neck, an ultrasound should be performed as initial** imaging **unless there is a high suspicion of malignancy**

Added:

- **Neck Mass (non-parotid region or thyroid):**
    - **Present on physical exam and remains non-diagnostic after x-ray or ultrasound is completed**
    - **Increased risk for malignancy**
    - **Failed 2 weeks of treatment for suspected infectious adenopathy**
- **Under increased risk for malignancy**
    - **History of cancer**

Added:

- **Neck Mass (parotid)**
    - **Parotid mass found on other imaging study and needing further evaluation**
- **Neck Mass (thyroid) - US is the initial imaging study of a thyroid region mass. CT is preferred over MRI in the evaluation of thyroid masses since there is less respiratory motion artifact**
    - **Staging and monitoring for recurrence of known thyroid cancer**
- **Pediatric patients (≤18 years old)**

    - Neck masses in the pediatric population if ultrasound is inconclusive or suspicious
    - History of malignancy
- Under known tumor or cancer of skull base, tongue, larynx, nasopharynx, pharynx, or salivary glands
    - Areas difficult to visualize on follow-up examination

Added:

- Bell's palsy/hemifacial spasm, if MRI is contraindicated or cannot be performed (for evaluation of the extracranial nerve course)
    - If atypical signs, slow resolution beyond three weeks, no improvement at four months, or facial twitching/spasms prior to onset
- Objective cranial nerve palsy (CN IX-XII) if MRI is contraindicated or cannot be performed (for evaluation of the extracranial nerve course)

Deleted:

- Palpable from Palpable suspicious lesions in mouth or throat
- Or found by physical exam from Suspicious mass/tumor found on another imaging study and needing clarification
- For all other non-thyroid neck masses with high suspicion for malignancy start with neck CT

Deleted:

- Pediatric patients (≤ 18 years old, ultrasounds should be completed as initial imaging
    - Neck masses are a common presenting complaint in the pediatric population with malignant causes less likely than in adults
- Suspected (salivary) gland abscess or mass
- Thoracic Outlet Syndrome

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